

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. *(Currently Amended)* A photonic crystal fibre comprising:  
a region of substantially uniform, lower refractive index; ~~which is~~  
~~said lower refractive index region~~ substantially surrounded by cladding which  
includes regions of higher refractive index and which is substantially periodic,  
~~characterised in that~~~~wherein~~ the region of lower refractive index has a longest transverse  
dimension which is longer than a single, shortest, period of the cladding, whereby light  
can be substantially confined in the lower refractive index region by virtue of a photonic  
band gap of the cladding material and can be guided along the fibre whilst it is so  
confined.
2. *(Original)* A photonic crystal fibre, as claimed in claim 1, in which the region of  
lower refractive index comprises a gas or a vacuum.
3. *(Previously Presented)* A photonic crystal fibre, as claimed in claim 1, in which the  
substantially periodic cladding material has a triangular lattice structure.
4. *(Original)* A photonic crystal fibre, as claimed in claim 3, in which the triangular  
lattice comprises air holes in a solid matrix.

5. *(Previously Presented)* A photonic crystal fibre, as claimed in claim 1, in which the regions of higher refractive index consist essentially of silica.
6. *(Previously Presented)* A photonic crystal fibre, as claimed in claim 1, in which the fraction of air in the cladding is at least 15% by volume based on the volume of the cladding.
7. *(Original)* A photonic crystal fibre, as claimed in claim 6, in which the region of the lower refractive index comprises air.
8. *(Previously Presented)* A photonic crystal fibre, as claimed in claim 1 in which the region of lower refractive index is a low pressure region.
9. *(Previously Presented)* A photonic crystal fibre, as claimed in claim 1, in which the lower index region comprises a material having a non-linear optical response, whereby light may be generated by non-linear processes in the lower-index region.
10. *(Currently Amended)* A photonic crystal fibre comprising:  
a region of substantially uniform, lower refractive index; ~~which is~~  
said lower refractive index region substantially surrounded by cladding which  
includes regions of higher refractive index and which is substantially periodic,  
~~characterised in that~~wherein the region of lower refractive index is large enough to  
support at least one transverse mode.
11. *(Original)* A photonic crystal fibre as claimed in claim 10, which is a single-mode fibre.

12. *(Previously Presented)* An optical device, including photonic crystal fibre according to claim 1.
13. *(Original)* An optical device, as claimed in claim 12, comprising a spectral filtering device.
14. *(Original)* An optical device, as claimed in claim 12, comprising an optical amplifier.
15. *(Original)* An optical device, as claimed in claim 12, comprising a laser.
16. *(Original)* An optical device, as claimed in claim 12, comprising a sensor that is capable of sensing a property of the gas of which the region of lower refractive index is comprised.
17. *(Previously Presented)* A telecommunications system, including a photonic crystal fibre according to claim 1.
18. *(Previously Presented)* A telecommunications system, including an optical device according to claim 12.
19. *(Previously Presented)* A telecommunications network including a telecommunications system according to claim 17.
20. *(Original)* A method of making a photonic crystal fibre, comprising the following steps:
  - (a) forming a stack of canes, the stack including at least one truncated cane which defines a cavity in the stack;
  - (b) drawing the stack into a fibre having an elongate cavity.

21. *(Cancelled)*
22. *(Previously Presented)* A method, as claimed in claim 20, in which the cavity has a transverse dimension greater than the corresponding transverse dimension of any of the canes.
23. *(Original)* A method, as claimed in claim 22, in which the cavity has a transverse dimension greater than the sum of the corresponding dimensions of any two of the canes.
24. *(Previously Presented)* A method, as claimed in claim 20, in which the stack of canes comprises canes which are capillaries.
25. *(Original)* A method, as claimed in claim 24, in which the capillaries form a triangular array.
26. *(Previously Presented)* A method, as claimed in claim 24, in which the capillaries are filled with a material other than air.
27. *(Previously Presented)* A photonic crystal fibre made by a method as claimed in claim 20.
28. *(Cancelled)*
29. *(Cancelled)*

30. (*Currently Amended*) A method of transmitting light along a photonic crystal fibre,

comprising the steps of:

- (a) providing a light source adjacent an end of said fiber; and
- (b) arranging for light from the light source to enter the fiber for transmission  
therethrough, the fiber being a fibre as claimed in claim 1.